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VOCABULARY LEARNING THROUGH READING GERMAN PROSE (EBACHER METHOD) WITH OR WITHOUT AURAL REINFORCEMENT.

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TO DETERMINE WHETHER AURAL-VISUAL LEARNING OF VOCABULARY IN CONTEXT IS MORE EFFECTIVE THAN ONLY VISUAL LEARNING, AND TO CONTRIBUTE STATISTICAL BASIS TO THE ASSUMPTION THAT AURAL FAMILIARITY WITH THE LANGUAGE FACILITATES MORE EFFICIENT LEARNING AND RETENTION OF VOCABULARY, A PROJECT WAS UNDERTAKEN AT EARLHAM COLLEGE THAT INVOLVED TWO GROUPS OF FIRST-YEAR COLLEGE STUDENTS. USING ERICH MARIA REMARQUE'S "DREI KAMERADEN" AS THE TEXT (WITH INTERLINEAR ENGLISH TRANSLATION AND A PHASING OUT OF VOCABULARY ITEMS AFTER THE TENTH OCCURRENCE), GROUP ONE READ THE MATERIAL ALONE FOR THE FIRST EIGHT WEEKS, AND IN THE SECOND EIGHT WEEKS READ WHILE SIMULTANEOUSLY LISTENING TO TAPES OF THE SAME TEXT. GROUP TWO DID THE SAME THING IN REVERSE ORDER. WRITTEN VOCABULARY TESTS WERE ADMINISTERED IN THE FIRST, SECOND, FIFTH, AND SIXTH WEEKS OF EACH 8-WEEK TERM, AND DICTATED TESTS IN THE OTHER FOUR WEEKS. RESULTS SHOW THAT, EXCEPT FOR THE SLIGHT POSITIVE EFFECTIVE OF TEXT WITH TAPE REINFORCEMENT IN THE SECOND TERM, THE EXPERIMENT DID NOT PROVE THAT THE USE OF TAPES AS AURAL REINFORCEMENT HAD ANY SIGNIFICANT EFFECT OVER THE TEXT ONLY METHOD. RECOMMENDATIONS ARE INCLUDED, AS WELL AS TABLES AND GRAPHS ON STUDENTS' LANGUAGE ABILITY, GROUP AVERAGES, AND TEST SCORES. (SS)

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VOCABULARY LEARNING THROUGH READING GERMAN PROSE (EBACHER METHOD) WITH OR WITHOUT AURAL REINFORCEMENT

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June 16, 1961

Vocabulary Learning Through Reading German Prose (Ebacher Method) With or Without Aural Reinforcement

I. Background, Problem, Objectives.

There is a common assumption in language instruction that aural familiarity with the language facilitates more efficient learning and retention of vocabulary in that language. This assumption has not been conclusively confirmed or refuted by experimentation.

The following experiment is an attempt to contribute to the statistical basis concerning this assumption. The main objective of this study is to determine whether aural-visual learning of vocabulary in context, through reading German narrative prose while simultaneously listening to tapes of this same material being read, is more effective than visual learning of vocabulary in context, i.e., reading the same German narrative prose text without the accompanying tape. The effectiveness of these two methods is to be evaluated in terms of performance on objective vocabulary tests, to be described below.

II. Preparation of Materials.

A. Preparation of experimental (Ebacher) text.

1. Choosing and abridging text.

With the permission of the editor,[1] an abridgement of Erich Maria Remarque's post-war (1936) novel Drei Kameraden was undertaken, based primarily on the Peebles text edition of 1951.[2] This was compared with the original,[3] from which about three passages were added, and a total of about one page subtracted from the Peebles text. The Peebles text, it

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1. Peebles, Waldo C., Professor of German, Boston University, Boston, Mass.
2. Peebles, Waldo C., ed., Drei Kameraden, American Book Co., N.Y., 1951.
3. Remarque, E. M., Drei Kameraden, Verlag Kurt Desch, München, 1959.

was found, in its abridgement retains the exact wording of the original novel. Thus the entire experimental (Ebacher) mimeographed text(165 pp.)[4] consisted of excerpts with continuity, but not simplifications in language and style, from the original Remarque novel. This then, is mature, unsimplified, modern German narrative prose, normally used by third semester (intermediate) students of German in U.S. colleges, now used in this experimental form (Ebacher method) by a beginning student of German after the first three weeks (15 hours of class contact).

2. Method of preparing abridged text (Ebacher method)[5]

This procedure consisted of following steps:

(a) typing the German manuscript, triple-spaced, pica type

(b) typing interlinearly, elite type, the English equivalent of the German word or phrase above, in its exact meaning according to the German context

(c) keeping a frequency check on these German words or phrases thus translated, by vocabulary and idiom cards

(d) phasing the English translated word or phrase out, omitting it from translation after the first ten occurrences of the German counterpart

(e) omitting from English translation, of:

(1) all cognates, (2) all proper names, (3) all forms of der, die, das, as various meanings of "the"(of the, to the), (4) all forms of dieser, as various meanings of "this", (5) all ein-words(forms of ein, kein, and possessive adjectives), (6) all forms of personal pronouns

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4. Brewster, R. R., ed., Drei Kameraden by Erich Maria Remarque, Abridged and Adapted to the Ebacher Rapid Reading Method by Robert R. Brewster, Earlham College, Richmond, Indiana. Under Research Contract No. SAE-8831, U.S. Office of Education, Washington, D.C.

5. First developed by Professor J.P. Ebacher for French at Xavier University, Cincinnati, Ohio.

(f) purchasing plastic grids, with alternate opaque and clear bands, with spacing such that when one superimposes the grid on the mimeographed text page, and adjusts it to the first line of German text, one sees all the lines of German text on the page and can read along in German as in any text. When one needs to find the meaning of a word or phrase in English, one slips the grid down one line, glances at the English interlinear equivalent, then slips the grid back up to the German line position so as to read on in German

(g) collating fifty copies of this mimeographed Ebacher method text for experimental use as a language laboratory text for beginning students of German at Earlham College

(h) having master tapes made, three sides, 7" reels of extra-play Mylar tape, spoken at normal rate of speed by a native speaker.[6] Twenty copies of each side of 7" reel were made simultaneously in the Earlham Language Laboratory.

III. Procedure of Experiment.

A. Experiment design.

1. Grouping students by paired associates.

At the end of the first week of classes of Term I, 60 students were chosen and paired according to language ability, as indicated on their College Entrance Examination Board, Scholastic Aptitude Test Verbal(S.A.T.V.) scores and their performance in raw score totals on the Carroll-Sapon, Psychological Corporation,Language Aptitude (L.A.T.) tests. Two groups of 30 each were formed by pairs, each with close a balance as possible as to year in college (only freshmen and sophomores were chosen) and as to sex. Of these two groups of paired students, 24 remained in the smaller group

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6. Buchinger, Hans W., Ph. D., University of Königsberg, Assistant Professor of Languages, Earlham College, Richmond, Indiana.

(Group I) after the first term, due to drop-outs and failures. The paired associates of these 24 Group I students were then chosen to form Group II for the entire experiment period of two terms of eight weeks each.[7] In these paired groups of 24 each, Group I students consisted of 18 men, 6 women; Group II students, of 15 men, 9 women; in each group there were 18 freshmen and 6 sophomores.

The grouping was done, after consultation,[8] by pairing, with the College Board Verbal score as the dominant factor. Students were paired (e.g. I-1 with II-1) on the basis of the closest S.A.T.V. scores. However, if there was a wide discrepancy in the L.A.T. scores of these pairs, the closeness of the L.A.T. score was then taken into consideration. Therefore, looking at the columns in Table A, Appendix, vertically, one sees irregularities in the descending order of the S.A.T.V. scores(examples: I-8 and I-9 vs. II-8 and II-9, because of their accompanying L.A.T. scores). This grouping cut across the class section lines, so that no complete group, I or II, was in any single classroom or lab situation simultaneously.

2. Design in class use.

Group I were given only the experimental text (Drei Kameraden described above) in the first term, (8 weeks).[9] Group II, in the same eight weeks, Term I, were given the experimental text plus the tapes of this same text in German language, by a native speaker, spoken at a normal rate of speed (cf. above). In the second term of eight weeks, the process was reversed, Group I now receiving text with tape, Group II now receiving text only. The design, then, was this:

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7. cf. Appendix, Table A
8. McDowell, James V., Ph. D., Dept. of Psychology and Testing Bureau, Earlham College, Richmond, Indiana.
9. Revision of Design as per letter of Dec. 28, 1960, to Research Division, Language Development Section, Division of Higher Education, Office of Education, Washington, D.C.

	Term I(8 Weeks)	Term II(8 Weeks)
Group I	Text Only	Text With Tape
Group II	Text With Tape	Text Only

3. Lab procedure.

One 50-minute period per week for a sequence of two eight-week periods was devoted to the application of this experiment. After a trial 50-minute period, the regular experimental lab periods followed this pattern:

(a) Distribute the experimental text to all students.

(b) Distribute the accompanying tape (covering about 50 pp. of text or five abridged chapters of the novel per tape side) to the users of tape (Group II students in Term I, Group I students in Term II).

(c) Distribute progress sheets(sample in Appendix)to all students.

(d) Students check their starting point in reading according to progress sheet.

(e) Allow time for students with tapes to adjust tape and find corresponding place on tape of their starting point.

(f) Signal to "start first reading."

(g) First reading continues 25 minutes. All students (both groups) read text only, without tapes.

(h) Signal to "stop first reading." Directions: "Write down under Week 1 (Week 2, etc., according to the week of the experiment), item 4, Time of first reading, 25 minutes. Item 5, Week 1, amount read, page and line number to which you have just read. Item 6, review time, write in, 10 minutes. Turn back to the page and line number of your own starting point in today's reading. Signal to "start review reading." This 10-minute period is the experimental period as affects tape users vs. non-tape users. This review period was chosen so that no playback was necessary,

but rather, complete simultaneous listening to tape, while reading, was achieved from the first week of the experiment on.

(i) Signal to "stop review reading." Directions:"Write down page and line number to which you have reviewed. If you have reviewed your own reading completely, put down the word 'once.' If you have had extra review time, put down the word 'once' and the page and line number of your second re-reading." The number of pages reviewed by the tape users was fairly uniform, controlled by the speed of the tape. The amount reviewed by non-tape users was more variable, dependent on individual reading speed. The non-tape users were urged not to pause over individual words while reading in review.

(j) Experimental texts and tapes were collected, and not used by the students until one week later, at the next 50-minute lab session.

IV. Testing.

The vocabulary tests were given with a one-day interval lapse of time, in the classroom session on the day after the lab day. It was necessary to do this because of the desirability of having the longest possible continuity of reading, 25 minutes, with 10 minutes review, and allowing sufficient time for distribution of materials, directions, adjustment of tapes, and seating arrangements, and other considerations common to language laboratories. All (84) students of first year German at Earlham College in Terms I and II, Sept. to March 1960-61, took part in the entire experiment and tests as part of the regular class work, although the results of only 24 pairs (cf. above) are being considered in this research. The purpose of the experiment was explained to the students and they were encouraged to cooperate fully. However, the test

grades of the experiment did not count toward the final grade of the student. In this sense there was no coercion on the student to do his best on the experiment tests. All students knew this by the time the first term grade reports came out, in Dec. 1960.

A. Preparation of Vocabulary Tests.

1. Type of test.

Tests in Weeks 1, 2, 5, 6, of each term consisted of 50 mimeographed German words directly from the experimental text(e.g."kannte" not changed to "kennen" ;"Häuser" not changed to "Haus"). The students wrote the English equivalent opposite the German word. These tests will be referred to as "written" tests (Appendix, Table E). Tests in Weeks 3, 4, 7, 8 were dictated tests, in which the classroom teacher, in this case the author of this report, spoke each of the 50 German vocabulary items twice, slowly. These tests will be referred to as "dictated" tests(Appendix Table F; also note,Tables B and C).

2. Selection of vocabulary items.

The selection of vocabulary for the tests, both written and dictated, followed this method. In the process of interlinear translation of the experimental text, all German words translated were indexed as to frequency of occurrence in the text (3-occurrence to 10-occurrence words). The vocabulary on these cards were then indexed, with chapter and page references. From this word list were selected 60% of the items of highest frequencies, 40% of the items of less high frequency, for each vocabulary test. The frequency of each word, of course, progressed from week to week, the students having seen the item progressively more times, even though in the section of the text tested, the item may have occurred only twice or three times. For example, in Test 1 (Week 1) covering pp. 1-6 the item "aber" had occurred 3 times. By Test 2 (Week 2), covering pp. 6-11, "aber" had occurred 6 times since page 1, and so forth up to 10 times, when

the item "aber" was dropped from translation and from testing. An example of a low frequency word, one chosen for the last 40% (or 20 items) on the test, was in Test 1 (Week 1) "nebeinander", a 1-occurrence word in Test 1. By Test 2(Week 2)"nebeinander" was a 2-occurrence word. In Test 3 (Week 3) it did not occur at all in the pages 11-18 covered by Test 3, therefore it remained a 2-occurrence word as a cumulative vocabulary item, and was not tested that week. By highest frequency item selection (60%) the following is meant. If 3-occurrence words were the highest frequency words (as in Test 1, Week 1) then all 3-occurrence words up to 30 items out of 50 were chosen for the test. The remaining "less high frequency"words (20 out of 50) were chosen in descending order, from the 2-occurrense words, and then from the 1-occurrence words. This method continued until, in most of Term II, 7-10 occurrence words were high frequency words(60%), and 6-3 occurrence words were "less high" frequency words (40%) on the vocabulary tests.

3. Reading material covered by each vocabulary test.

The number of pages on which the test was based each week was a variable, dependent on the least number of pages read by a student in either group. The number of pages successively covered by tests in Term I (8 weeks) was 6, 5, 7, 5, 5, 5, 6, 4; in Term II (8 weeks) 6, 7, 11, 10, 12, 11, 13, 10. The lower numbers in Week 8 of each term are due to ending the term's testing at the end of a chapter. There was an interval of five weeks between Test 8 Term I and Test 1 Term II.

4. Grading of weekly vocabulary tests.

The grading was all done by the same person, an assistant in German[10] with competent knowledge of German and of statistics, on the basis of 50 items with perfect score 100, 2 points off for incorrect meaning of the English equivalent, 1 point off for grammatical errors (tense, case, number, etc.). The results were entered on the progress sheets (Appendix—

10. Stratton, Dorothy, major in mathematics and German, Earlham College, Richmond, Indiana.

Sample) and seen by the student in the following lab period, just before he started his next reading.

V. Evaluation of Results of the Experiment.

A. Objective test results

1. Text with tape vs. text only, week by week, within each term.

The test results of the eight tests corresponding to the eight weeks of each term are shown in Tables B and C of the Appendix. As may be seen in Graph A in the Appendix, derived from Tables B and C, the average week by week performance of the users of text only (Group I) was above that of users of text with tape (Group II) in each of the eight weeks of Term I. The difference varied from 1 to 6 points out of 100, the perfect score for all vocabulary tests given. Score differences by weeks were: 1-4-1-6-1-1-2-5.

Within Term II text with tape (Group I) was above text only (Group II) in each of the dictated tests (Weeks 3, 4, 7, 8) by 2 to 4 points out of 100. Score differences by weeks were: 2-4-3-4. Within Term II text only (Group II) was above text with tape(Group I) in each of the written tests by differences of 1 to 4 points out of 100. Score differences by weeks were: 1-4-1-1.

This would indicate that the reinforcement of learning by tapes did not take its effect until Term II, the second eight weeks, and then, in the dictated tests only. But the amount of difference, 2 to 4 points out of 100 was not considered statistically significant.

2. Text with tape vs. text only. Group performance in entire term.

This may be seen in Table G, Appendix. The differences in performance, from the point of view of the text with tape group, show again that there is generally no significant difference in the performance of the group with aural-visual means of vocabulary learning (text with tape) and those with only visual (text only) means. The performance of text with

tape students on dictated tests within Term II, however, again showed a better performance than the text only students, by + 3.688 out of 100. This affected the total performance on all-vocabulary tests within Term II and here was the only other instance in which text with tape was above text only in performance, by a difference of .542, an insignificant difference. All other difference scores, with minus prefix, showed that the text with tape did slightly worse than the text only, by statistically non-significant differences.

3. Text only proceeding to text with tape, and vice versa, differences in progress in time (Term I to Term II).

These figures are shown in Table H. The average progress by group, proceeding from text only to text with tape, was taken as the basis for comparison, since the hypothesis of the experiment was that adding the aural reinforcement to the visual learning of vocabulary should aid in vocabulary learning. In Table H we see that adding the tape to the text only had a slight effect only in the grand average differences of the dictated vocabulary tests, an improvement in this category, by +1.063 out of 100. In written tests only, starting with text only and proceeding to text with tape was worse (-3.771) than having the background of tape reinforcement, then being deprived of tapes (text with tape to text only). This caused the results in all-vocabulary tests to be slightly worse (-1.625) for the users of text only, who proceeded to reinforcement in learning by text with tape. All these figures were not significant differences. However, the pattern of slight advantage to text with tape students on the dictated vocabulary tests (+1.063) prevailed, due to Term II figures.

4. Conclusion.

In conclusion, then, except for the slight positive effect of text with tape reinforcement in the second term of eight weeks, as shown in the difference score (+3.688 and +1.063), the statistical results of

this experiment do not prove that there is a significant effect, either positive or negative, of the use of tapes as aural reinforcement to only visual, in vocabulary learning through reading German prose, as designed in this experiment.

A statistical significance test, t-test, was run on the basis of Table D figures, and the significance factor t was 1.0673, a statistically not significant factor.

B. Subjective Appraisal.

Possible reasons why this experiment did not show a significant difference, either positive or negative, between the two methods of vocabulary learning through reading German prose, by text only, or by text reinforced with simultaneous listening to tapes:

1. The total experiment time of tape vs. non-tape use, 10 minutes, each of 16 times, spread over 16 weeks with a 5-week interval between the two 8-week terms, may have been too diluted and insufficient a learning time.

2. Since regular class work involved considerable use of lesson tapes, uncontrolled, outside of class, on four of the five class days per week not involved in this experiment, the two groups may have levelled out because of the random use of these class tapes.

3. Since the testing in this experiment was entirely testing of passive vocabulary, German to English, with the students writing down the answers in English, it may be that the learning of such vocabulary is not affected significantly by aural reinforcement to visual learning.

4. S.A.T.V. scores, used as dominant factors in the division into two control groups in this experiment, may not be a valid index of foreign language vocabulary learning ability. L.A.T. total raw scores, also used as a regulating factor in the two control groups, may have been too

inclusive, and only the vocabulary learning (Paired Associates, Part V) partial scores on these tests possibly should have been used.

5. Student motivation.

The irregularity in descending order of test scores (Tables B and C) of individual students I-1 to I-24 and II-1 to II-24, may be due to the fact that, given no compulsion (no score counted on the final class grade of the student), there was no prediction as to the motivation of each student to do the work up to his ability in this experiment.

C. Recommendations.

1. Using a longer period than 10 minutes per experiment hour for the control by tape with text vs. text only procedure. With beginning students, however, who have few (in this case 15) contact hours of the language behind them, one would have to guard against frustration from frequent short rewinding of tape to catch individual words, due to the fact that the students could not keep up with simultaneous listening and reading. The tapes were used in the review period, because aural reinforcement by simultaneous continuous listening to tapes was one of the stipulations in the proposal to this project.

2. Stricter control of students, individually, and not by lab sections of up to 25 students, so as to give each student, individually, the appropriate vocabulary test as he completes a controlled amount of reading at his own reading speed. Also, stricter control of all factors, by individual supervision.

3. Using control groups, not from ongoing German classes which are affected day after day by class learning, but from the fresh volunteer students at short intervals in the two methods, visual only and aural-visual.

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—Robert R. Brewster
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June 16, 1961

APPENDIX

Table A

Division by Verbal and Language Ability

Group I			Group II		
Student	S.A.T.V.*	L.A.T.**	Student	S.A.T.V.*	L.A.T.**
I-1	734	156	II-1	747	162
I-2	704	159	II-2	698	149
I-3	685	122	II-3	674	124
I-4	670	129	II-4	666	129
I-5	640	119	II-5	668	149
I-6	635	147	II-6	628	145
I-7	608	129	II-7	608	126
I-8	583	131	II-8	589	141
I-9	588	94	II-9	576	109
I-10	581	115	II-10	573	133
I-11	569	111	II-11	571	113
I-12	553	153	II-12	557	125
I-13	558	109	II-13	551	107
I-14	529	135	II-14	557	125
I-15	536	104	II-15	539	135
I-16	512	113	II-16	512	113
I-17	519	99	II-17	506	91
I-18	502	75	II-18	493	91
I-19	483	133	II-19	480	130
I-20	482	108	II-20	486	118
I-21	454	119	II-21	457	119
I-22	442	114	II-22	476	115
I-23	439	80	II-23	467	97
I-24	383	82	II-24	358	97

* S.A.T.V.: Scholastic Aptitude Test; College Entrance Examination Board; Verbal score.

**L.A.T.: Modern Language Aptitude Test; Carroll-Sapon, The Psychological Corporation, (Raw score total).

Table B

Weekly Interval Performance on All Vocabulary Tests

Group I

	Term One (Text Only)								Term Two (Text with Tape)							
Week	1	2	3*	4*	5	6	7*	8*	1	2	3*	4*	5	6	7*	8*
Student																
I-1	52	75	66	72	79	74	80	75	88	77	76	73	76	72	72	68
I-2	51	64	56	72	68	67	70	58	79	67	43	73	80	72	69	56
I-3	27	43	37	34	40	41	48	39	58	46	48	43	58	49	33	41
I-4	43	63	56	78	61	65	61	51	64	67	71	65	66	71	72	66
I-5	32	69	46	44	64	63	54	47	68	65	74	62	73	73	65	64
I-6	33	40	40	41	53	52	49	46	59	63	70	54	64	57	59	52
I-7	39	54	44	52	72	64	71	60	72	71	80	80	83	81	71	65
I-8	40	65	56	45	60	59	57	58	63	69	77	62	73	74	71	61
I-9	37	52	49	42	58	54	54	50	71	63	67	73	67	75	71	63
I-10	42	67	61	60	70	67	78	65	81	77	81	73	81	71	85	71
I-11	29	41	42	30	41	56	52	47	56	41	60	58	57	49	46	42
I-12	41	56	34	54	65	56	55	43	57	60	58	56	65	62	67	58
I-13	48	59	51	45	58	57	46	50	62	56	59	59	57	56	59	56
I-14	30	62	50	51	64	57	64	61	76	72	75	60	78	71	75	69
I-15	37	55	44	42	53	59	54	47	66	59	64	58	64	62	65	46
I-16	23	39	28	29	41	39	47	42	52	49	40	52	54	45	49	34
I-17	29	49	32	30	44	45	55	31	48	23	39	45	53	35	38	27
I-18	25	36	22	22	37	27	28	19	27	23	14	58	13	23	20	4
I-19	26	51	37	45	51	50	39	41	58	42	54	50	46	39	50	42
I-20	26	33	28	27	47	37	38	33	54	44	40	47	42	42	44	36
I-21	28	53	45	39	63	52	55	51	73	57	69	58	65	64	61	47
I-22	35	38	39	28	42	38	50	46	62	51	68	56	54	42	50	59
I-23	28	51	50	30	53	50	44	48	55	59	53	63	51	49	45	39
I-24	21	34	22	37	49	47	56	39	60	45	49	51	57	39	38	45
Average	34	52	43	44	56	53	55	48	63	56	60	60	62	57	57	50

* Dictated vocabulary test.
All non-starred weeks indicate written(non-dictated) vocabulary tests.
All scores on basis of 100-perfect score.

Table C

Weekly Interval Performance on All Vocabulary Tests

Group II

	Term One (Text with Tape)								Term Two (Text only)							
Week 1	2	3*	4*	5	6	7*	8*	1	2	3*	4*	5	6	7*	8*
Student																
II-1 29	59	54	44	65	54	50	50	66	72	63	67	67	71	61	49
II-2 38	64	54	42	62	34	57	58	55	64	63	54	64	62	48	47
II-3 30	54	53	49	66	67	66	53	67	67	76	62	69	70	62	58
II-4 34	56	54	38	63	52	60	52	69	62	68	60	62	63	64	49
II-5 23	34	46	38	54	55	53	52	59	60	61	68	74	54	55	61
II-6 26	42	46	43	62	54	49	52	72	55	67	40	59	52	55	44
II-7 36	56	42	39	54	59	58	41	70	66	69	60	70	52	58	39
II-8 24	38	27	22	42	41	46	39	54	56	54	53	61	60	47	43
II-9 35	53	52	48	61	56	57	59	72	63	66	65	73	69	61	56
II-10 41	49	55	37	49	55	59	50	66	50	57	57	60	66	54	45
II-11 28	42	32	28	51	41	45	32	53	57	47	43	58	57	55	44
II-12 33	39	43	40	55	59	59	39	61	64	60	55	60	58	45	43
II-13 28	41	39	24	50	43	47	38	49	46	49	48	58	58	52	44
II-14 43	45	36	52	52	48	48	49	63	64	65	50	73	57	54	50
II-15 36	42	40	40	59	59	60	52	76	67	63	67	78	67	68	65
II-16 30	34	36	34	36	41	45	33	47	39	36	55	53	39	44	42
II-17 28	31	27	25	53	45	46	35	66	50	40	48	54	48	48	44
II-18 38	56	34	31	56	54	52	38	70	67	48	52	61	63	43	44
II-19 28	40	35	39	44	50	47	46	73	56	53	65	61	52	54	49
II-20 32	57	41	29	57	54	52	31	59	55	38	27	55	49	34	29
II-21 46	54	44	38	57	62	58	39	72	67	56	56	61	54	51	49
II-22 32	55	39	48	57	54	54	47	69	69	67	64	64	68	63	51
II-23 28	43	30	36	44	44	43	45	60	56	62	59	50	51	49	39
II-24 46	69	56	55	66	65	64	55	76	65	60	60	64	61	67	55
Average															
33	48	42	38	55	52	53	43	64	60	58	56	63	58	54	46

* Dictated vocabulary test. All non-starred weeks indicate written(non-dictated) vocabulary tests. All scores on basis of 100-perfect score.

Table D

All Vocabulary Tests: Averages*

Group I				Group II			
Student	Text Only	Text w. Tape	Difference	Student	Text w. Tape	Text Only	Difference
I-1	71.625*	75.250*	3.625	II-1	50.625*	64.500*	13.875
I-2	63.250	67.375	4.125	II-2	51.125	57.125	6.000
I-3	38.625	47.000	8.375	II-3	54.750	66.375	11.625
I-4	59.750	67.750	8.000	II-4	51.125	62.125	11.000
I-5	52.375	68.000	15.625	II-5	44.375	61.500	17.125
I-6	44.250	59.750	15.500	II-6	46.750	55.500	8.750
I-7	57.000	75.375	18.375	II-7	48.125	60.500	12.375
I-8	55.000	68.750	13.750	II-8	34.875	53.500	18.625
I-9	49.500	68.750	19.250	II-9	52.625	65.625	13.000
I-10	63.750	77.500	13.750	II-10	49.375	56.875	7.500
I-11	42.250	51.125	8.875	II-11	37.375	51.750	14.375
I-12	50.500	60.375	9.875	II-12	45.875	55.750	9.875
I-13	51.750	58.000	6.250	II-13	38.750	50.500	11.750
I-14	54.875	72.000	17.125	II-14	46.625	59.500	12.875
I-15	48.875	60.500	11.625	II-15	48.500	68.875	20.375
I-16	36.000	46.875	10.875	II-16	36.125	44.375	8.250
I-17	39.375	38.500	-.875	II-17	36.250	49.750	13.500
I-18	27.000	22.750	-4.250	II-18	44.875	56.000	11.125
I-19	42.500	47.625	5.125	II-19	41.125	57.875	16.750
I-20	33.625	43.625	10.000	II-20	44.125	43.250	-.875
I-21	48.250	61.750	13.500	II-21	49.750	58.250	8.500
I-22	39.500	55.250	15.750	II-22	48.250	64.375	16.125
I-23	44.250	51.750	7.500	II-23	39.125	53.250	14.125
I-24	38.125	48.000	9.875	II-24	59.500	63.500	4.000
Grand Average	48.000	58.068	10.068	Grand Average	45.833	57.526	11.693

*Each figure indicates average of eight weekly scores, as shown in Tables B and C, Terms One and Two.

Table E

Written Vocabulary Tests: Averages*

Group I				Group II			
Student	Text Only	Text w. Tape	Difference	Student	Text w. Tape	Text Only	Difference
I-1	70.000*	78.250*	8.250	II-1	51.750*	69.000*	17.250
I-2	6 2.500	74.500	12.000	II-2	49.500	61.250	11.750
I-3	37.750	52.750	15.000	II-3	54.250	68.250	14.000
I-4	58.000	67.000	9.000	II-4	51.250	64.000	12.750
I-5	57.000	69.750	12.750	II-5	41.500	61.750	20.250
I-6	44.500	60.750	16.250	II-6	46.000	59.500	13.500
I-7	57.250	76.250	19.500	II-7	51.250	64.500	13.250
I-8	56.000	69.750	13.750	II-8	36.250	57.750	21.500
I-9	50.250	69.000	18.750	II-9	51.250	69.250	18.000
I-10	61.500	77.500	16.000	II-10	48.500	60.500	12.000
I-11	41.750	50.750	9.000	II-11	40.500	56.250	15.750
I-12	54.500	61.000	6.500	II-12	46.500	60.750	14.250
I-13	55.500	57.750	2.250	II-13	40.500	52.750	12.250
I-14	53.250	74.250	21.000	II-14	47.000	64.250	17.250
I-15	51.000	62.750	11.750	II-15	49.000	72.000	23.000
I-16	35.500	50.000	14.500	II-16	35.250	44.500	9.250
I-17	41.750	39.750	-2.000	II-17	39.250	54.750	15.500
I-18	31.250	21.500	-9.750	II-18	51.000	65.250	14.250
I-19	44.500	46.250	1.750	II-19	40.500	60.500	20.000
I-20	35.750	45.500	9.750	II-20	50.000	54.500	4.500
I-21	49.000	64.750	15.750	II-21	54.750	63.500	8.750
I-22	38.250	52.250	14.000	II-22	49.500	67.500	18.000
I-23	45.000	53.500	8.000	II-23	39.750	54.250	14.500
I-24	37.750	50.250	12.500	II-24	61.500	66.500	5.000
Grand Average	48.750	59.427	10.677	Grand Average	46.937	61.375	14.438

* Each figure indicates average of four weekly scores, as shown in Tables B and C, Terms One and Two.

Table F

Dictated Vocabulary Tests: Averages

Group I				Group II			
Student	Text Only	Text w. Tape	Difference	Student	Text w.Tape	Text Only	Difference
I-1	73.250*	72.250*	-1.000	II-1	49.500 *	60.000 *	10.500
I-2	64.000	60.250	-3.750	II-2	52.750	53.000	.250
I-3	39.500	41.250	1.750	II-3	55.250	64.500	9.250
I-4	61.500	68.500	7.000	II-4	51.000	60.250	9.250
I-5	47.750	66.250	18.500	II-5	47.250	61.250	14.000
I-6	44.000	58.750	14.750	II-6	47.500	51.500	4.000
I-7	56.750	74.000	17.250	II-7	45.000	56.500	11.500
I-8	54.000	67.750	13.750	II-8	33.500	49.250	15.750
I-9	48.750	68.500	19.750	II-9	54.000	62.000	8.000
I-10	66.000	77.500	11.500	II-10	50.250	53.250	3.000
I-11	42.750	51.500	8.750	II-11	34.250	47.250	13.000
I-12	46.500	59.750	13.250	II-12	45.250	50.750	5.500
I-13	48.000	58.250	10.250	II-13	37.000	48.250	11.250
I-14	56.500	69.750	13.250	II-14	46.250	54.750	8.500
I-15	46.750	58.250	11.500	II-15	48.000	65.750	17.750
I-16	36.500	43.750	7.250	II-16	37.000	44.250	7.250
I-17	37.000	37.250	.250	II-17	33.250	45.000	11.750
I-18	22.750	24.000	1.250	II-18	38.750	46.750	8.000
I-19	40.500	59.000	18.500	II-19	41.750	55.250	13.500
I-20	34.000	41.750	7.750	II-20	38.250	32.000	-6.250
I-21	47.500	64.750	17.250	II-21	44.750	53.000	8.250
I-22	40.750	58.250	17.500	II-22	47.000	61.250	14.250
I-23	43.000	50.000	7.000	II-23	38.500	52.250	13.750
I-24	38.500	45.750	7.250	II-24	57.500	60.500	3.000
Grand Average	47.354	57.375	10.021	Grand Average	44.729	53.687	8.958

*Each figure indicates average of four weekly scores, Weeks 3, 4, 7, 8, of each term of each group as shown in tables B and C.

Table G

Differences in Group Performance Based on Grand Averages (Tables, D, E, F)

	Text with Tape	Text Only	Difference[1] (based on Text with Tape Performance)
All Vocabulary Tests			
1. Within Term I	45.833 (II)[2]	48.000 (I)	-2.167
2. Within Term II	58.068 (I)	57.526 (II)	+.542
Written Vocabulary Tests Only			
1. Within Term I	46.937 (II)	48.750 (I)	-1.623
2. Within Term II	59.427 (I)	61.735 (II)	-1.948
Dictated Vocabulary Tests Only			
1. Within Term I	44.729 (II)	47.543 (I)	-2.525
2. Within Term II	57.375 (I)	53.687 (II)	+3.688

Table H

Differences in Progress[3] of Group Performance Based on Grand Average Differences

(Tables D, E, F)

	Text Only to Text with Tape	Text with Tape to Text Only	Difference (based on Proceeding from Text Only to Text with Tape)
1. All Vocabulary Tests	10.068	11.693	-1.625
2. Written Vocabulary Tests Only	10.677	14.438	-3.771
3. Dictated Vocabulary Tests Only	10.021	8.958	+1.063

1. Difference: Points on basis of 100-perfect score.

2. Group I or Group II, in parentheses.

3. Progress: Progress in time (Term I to TermII) from one method to the other.

Progress Sheet--Sample

1. NAME _____ 2. Section _____

3. Week	1	2	3	4	5	6	7	8	
4. Time of first reading									
5. Amount Read									
6. Review Time									
7. Amount Reviewed									
8. Vocabulary Test									
a) Written									
b) Dictated									
*9. Comprehension Test									
a) Written									
b) Dictated									

* Item 9 results are not a part of the subject of this report (cf. title of this report).

Group I Text Only: Unbroken line_____
Group IIText with Tape: Broken line_____

GRAPH A

Group II Text Only: Unbroken line_____
Group I Text with Tape: Broken line_____